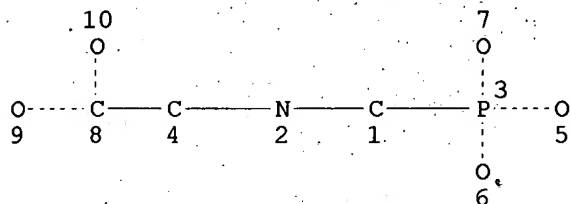


=&gt; d que 135

L2

STR



## NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

## GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 10

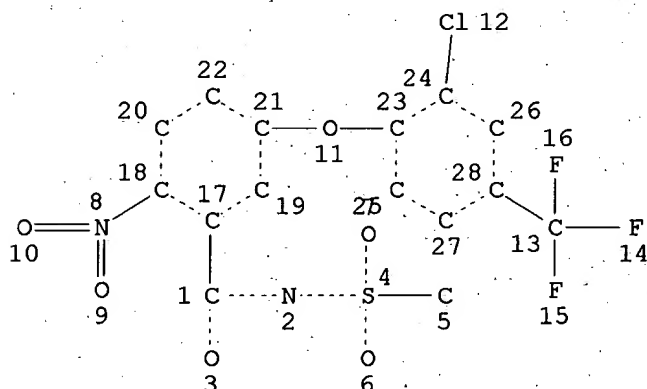
## STEREO ATTRIBUTES: NONE

L4 734 SEA FILE=REGISTRY FAM FUL L2

L5 655 SEA FILE=REGISTRY ABB=ON PLU=ON L4 AND NC&lt;4

L7 STR

Claim 14



## NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

## GRAPH ATTRIBUTES:

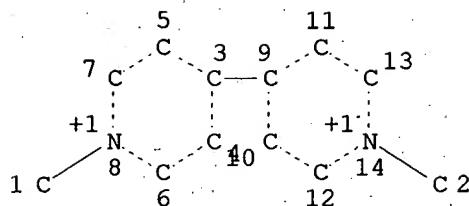
RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 28

## STEREO ATTRIBUTES: NONE

L9 44 SEA FILE=REGISTRY FAM FUL L7

L11 STR



## NODE ATTRIBUTES:

CHARGE IS E+1 AT 8  
 CHARGE IS E+1 AT 14  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

## GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 14

## STEREO ATTRIBUTES: NONE

L13 971 SEA FILE=REGISTRY FAM FUL L11  
 L14 873 SEA FILE=REGISTRY ABB=ON PLU=ON L13 AND NC<4  
 L16 1404 SEA FILE=HCAPLUS ABB=ON PLU=ON (L5 OR L9 OR L14) (L)AGR/RL  
 L23 42325 SEA FILE=HCAPLUS ABB=ON PLU=ON HERBICIDES/CT  
 L33 130 SEA FILE=HCAPLUS ABB=ON PLU=ON (L5 OR L9 OR L14) (L)ADJUVANT?  
 L34 72 SEA FILE=HCAPLUS ABB=ON PLU=ON L33 AND L16  
 L35 45 SEA FILE=HCAPLUS ABB=ON PLU=ON L34 AND L23

=> d ibib ab hitind 1-45

L36 ANSWER 1 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2003:207735 HCAPLUS

DOCUMENT NUMBER: 138:380785

TITLE: Efficacy of coal-based acid on the bioactivity of tribenuron-methyl

AUTHOR(S): Zhang, Caifeng; Li, Shanxiang; Li, Baoqing; Li, Wen

CORPORATE SOURCE: State Key Lab of Coal Conversion, Institute of Coal Chemistry, Chinese Academy of Science, Taiyuan, 030001, Peop. Rep. China

SOURCE: Preprints of Symposia - American Chemical Society, Division of Fuel Chemistry (2003), 48(1), 72-73  
 CODEN: PSADZF; ISSN: 1521-4648

PUBLISHER: American Chemical Society, Division of Fuel Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The adjuvant effect of water-sol. coal-based acid (WSCA), i.e., humic substance originally existing in Jincheng weathered coal (J-WSCA) and W- and H-WSCA prepd. by oxidn. and degrdn. of Wuchuan weathered lignite and Huolinhe lignite, resp., on the bioactivity of tribenuron-Me was studied. Firstly, maize plumule was used for comparing the effect of W-WSCA, H-WSCA and J-WSCA on bioactivity of tribenuron-Me. Results of a bioassay on Brassica campestris showed that W-WSCA and J-WSCA can enhance the inhibitory action of tribenuron-Me on plant growth with ED50 values of 1.20 with herbicide alone, 0.90 with tribenuron-Me + W-WSCA, 1.05 with tribenuron-Me + J-WSCA. WSCA can enhance the biol. activity of

glyphosate, and the adjuvant effect was significant. The action of newly formed W- and H-WSCA was better than that of J-WSCA originally existing in coal. Moreover, the cost was reduced because W-WSCA and H-WSCA were the raw product, while J-WSCA was the purified product. The effectiveness of WSCA differed among weeds.

CC 5-3 (Agrochemical Bioregulators)

IT **Herbicides**

(adjuvant purified from weathered coal or prepd. by oxidn. and degrading of lignite effect on bioactivity of)

IT 1071-83-6, Glyphosate 101200-48-0, Tribenuron-methyl

RL: **AGR (Agricultural use)**; BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)

(herbicide **adjuvant** purified from weathered coal or prepd. by oxidn. and degrading of lignite effect on bioactivity of)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 2 OF 45 HCAPLUS --COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2003:202378 HCAPLUS

DOCUMENT NUMBER: 138:233435

TITLE: Multi-layer adjuvants for controlled delivery of agro-materials into plant tissues

INVENTOR(S): Wiesman, Zeev; Markus, Arie

PATENT ASSIGNEE(S): Agro-Vant Ltd., Israel

SOURCE: PCT Int. Appl., 35 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003020028	A2	20030313	WO 2002-IL723	20020902
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			

PRIORITY APPLN. INFO.:

IL 2001-145236 A 20010903

AB Compn. for the treatment of plants, that is a structural combination of agro-materials and adjuvant formulations, is disclosed. A specific compn. is a particulate material in which the agro-material particle constitutes the nucleus of each compn. particle and adjuvant formulations constitute a coating of the compn. particle. The adjuvant formulations comprise a plurality of components, which constitute substantially superimposed coating layers in each particle of the compn. and preferably comprise a combination of lipophilic and hydrophilic cuticle surface active agents, wetting agents, thickening agents and fatty self-emulsified components. Special compns. are those in which different agro-materials are used. The agromaterials are chosen from fertilizers, trace elements, plant growth

regulators, biostimulants, pesticides, herbicides and insecticides. The invention also relates to methods of treating plants by applying the agro-material compns., and to methods of prepg. the agro-material compns.

IC ICM A01N025-26

ICS C05G005-00

CC 5-6 (Agrochemical Bioregulators)

Section cross-reference(s): 19

IT **Hormones, plant**

RL: AGR (Agricultural use); BSU (Biological study, unclassified); BIOL

(Biological study); USES (Uses)

(brassinosteroids; multi-layer adjuvants for controlled delivery into plant tissues of)

IT **Hormones, plant**

RL: AGR (Agricultural use); BSU (Biological study, unclassified); BIOL

(Biological study); USES (Uses)

(growth inhibitors; multi-layer adjuvants for controlled delivery into plant tissues of)

IT **Algae**

**Herbicides**

**Insecticides**

**Pesticides**

**Seaweed**

(multi-layer adjuvants for controlled delivery into plant tissues of)

IT **Amino acids, biological studies**

**Auxins**

**Cytokinins**

**Fertilizers**

**Gibberellins**

**Hormones, insect**

**Hormones, plant**

**Humic acids**

**Trace elements, biological studies**

RL: AGR (Agricultural use); BSU (Biological study, unclassified); BIOL

(Biological study); USES (Uses)

(multi-layer adjuvants for controlled delivery into plant tissues of)

IT **Insecticides**

(organophosphorus; multi-layer adjuvants for controlled delivery into plant tissues of)

IT 69-72-7, Salicylic acid, biological studies 74-85-1, Ethylene, biological studies 314-40-9, Bromacil 330-54-1, Diuron 1071-83-6, Glyphosate 6894-38-8, Jasmonic acid 7439-89-6, Iron, biological studies 7439-95-4, Magnesium, biological studies 7439-96-5, Manganese, biological studies 7439-98-7, Molybdenum, biological studies 7440-09-7, Potassium, biological studies 7440-42-8, Boron, biological studies 7440-48-4, Cobalt, biological studies 7440-66-6, Zinc, biological studies 7440-70-2, Calcium, biological studies 7723-14-0, Phosphorus, biological studies 7727-37-9, Nitrogen, biological studies 7758-11-4, Dipotassium phosphate 7778-77-0, Monopotassium phosphate 10028-22-5 10043-35-3, Boric acid, biological studies 16672-87-0, Ethephon 21293-29-8, Absciscic acid  
RL: **AGR (Agricultural use)**; BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)  
(multi-layer adjuvants for controlled delivery into plant tissues of)

L36 ANSWER 3 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2003:9392 HCAPLUS

DOCUMENT NUMBER: 138:349957  
TITLE: Citric ester surfactants as adjuvants with herbicides  
AUTHOR(S): Johnson, Heather E.; Hazen, James L.; Penner, Donald  
CORPORATE SOURCE: Department of Crop and Soil Sciences, Michigan State  
University, East Lansing, MI, 48824-1325, USA  
SOURCE: Weed Technology, (2002), 16(4), 867-872  
CODEN: WETEE9; ISSN: 0890-037X  
PUBLISHER: Weed Science Society of America  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Research was conducted to evaluate structure-function relationships of citric acid esters that varied in alkyl chain no. (mono-, di-, and tri-), ethylene oxide no. (EO 4, 7, 9, 25, 35, 52), and alkyl chain length (C8, C12/14, C16/18). Adjuvant efficacy was evaluated on two weed species for each of 4 herbicides. The exptl. adjuvants were applied with glyphosate and glufosinate on giant foxtail and common lambsquarters, imazamox on velvetleaf and common lambsquarters, and nicosulfuron on giant foxtail and large crabgrass. Adjuvant efficacy was weed and herbicide specific. EO no. and alkyl chain length and no. influenced adjuvant efficacy with the effectiveness of various combinations dependent on both herbicide and weed species. EO nos. as high as 52 were shown to be effective for glyphosate, glufosinate, and imazamox.

CC 5-3 (Agrochemical Bioregulators)

IT **Herbicides**

Pesticide formulations

Surfactants

(ethoxylated alkyl citrate surfactants as adjuvants for herbicides)

IT **1071-83-6**, Accord 77182-82-2, Liberty 111991-09-4, Accent 114311-32-9, Raptor

RL: **AGR (Agricultural use)**; BIOL (Biological study); USES (Uses)

(ethoxylated alkyl citrate surfactants as **adjuvants** for herbicides)

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 4 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:946028 HCAPLUS

DOCUMENT NUMBER: 138:1348

TITLE: Adjuvant compositions for pesticides containing mixtures of alkoxyated amines, with alkoxyated diamines or polyamines

INVENTOR(S): Elsik, Curtis M.; Stridde, Howard M.

PATENT ASSIGNEE(S): Huntsman Petrochemical Corporation, USA

SOURCE: PCT Int. Appl., 66 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002098221	A1	20021212	WO 2002-US17175	20020531
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,				

PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,  
 UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU,  
 TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,  
 CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,  
 BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.:

US 2001-295087P P 20010601

OTHER SOURCE(S): MARPAT 138:1348

AB Agricultural surfactant adjuvants that enhance the bioefficacy of herbicides and other pesticides comprise : (a) a polyoxyalkylene alkylamine  $\text{CH}_3(\text{CH}_2)_x\text{N}[(\text{R}_1\text{O})_y(\text{R}_2\text{O})_p\text{H}][(\text{R}_1\text{O})_z(\text{R}_2\text{O})_q\text{H}]$  ( $x = 5-21$ ;  $\text{R}_1, \text{R}_2 = (\text{un})\text{branched C1-C6 alkyl}$ ;  $y, z, p, q = 0-60$ ), and (b) a polyoxyalkylene alkyldiamine  $(\text{R}_1)(\text{R}_2)\text{N}(\text{CH}_2)_p\text{N}(\text{R}_3)(\text{R}_4)$  ( $p = 1-6$ ;  $\text{R}_1, \text{R}_2, \text{R}_3, \text{R}_4 = \text{H}$ , or alkoxy), or (c) a polyoxyalkylene polyalkylpolyamine  $\text{X}(\text{R}_3\text{O})_a\text{R}_4\text{N}(\text{R}_1)(\text{R}_2)$  ( $\text{X} = \text{OH}$ ,  $(\text{un})\text{branched C1-C6 alkyl}$ , etc.;  $\text{R}_1, \text{R}_2 = \text{H}$ ,  $(\text{un})\text{branched C1-C6 alkyl}$ , etc.;  $\text{R}_3 = (\text{un})\text{branched C1-C6 alkyl}$ ;  $\text{R}_4 = (\text{un})\text{branched C1-C6 alkyl bridge}$ ;  $a = 1-100$ ). The adjuvants combine high efficacy and low toxicity, including low eye and skin irritancy and low aquatic toxicity. Sequesterant agents can also be added to condition calcium or other interfering ions or species present in spray water.

IC ICM A01N025-30

ICS A01N057-02

CC 5-6 (Agrochemical Bioregulators)

IT **Herbicides**

**Insecticides**

(adjuvant compns. contg. mixts. of alkoxyated amines, with alkoxyated diamines or polyamines, for)

IT **1071-83-6D**, Glyphosate, salts **1071-83-6D**, Glyphosate, water-sol. salts

RL: **AGR (Agricultural use)**; BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)

(adjuvant compns. contg. mixts. of alkoxyated amines, with alkoxyated diamines or polyamines, for)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 5 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:909438 HCAPLUS

DOCUMENT NUMBER: 138:282708

TITLE: Tank-mix adjuvants for agrochemicals

AUTHOR(S): Gauthier, Christian

CORPORATE SOURCE: Laboratoire de Phytopharmacie INRA BP 86510, Dijon, 21065, Fr.

SOURCE: Agro-Food-Industry Hi-Tech (2002), 13(4), 42-46

CODEN: AIHTEI; ISSN: 1120-6012

PUBLISHER: TeknoScienze

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB A review on agrochem. adjuvants. Tank-mix adjuvants are increasingly used in Europe, mainly with herbicides. The expected benefits are dose redn., regularization of efficacy and drift limitation. According to their modes of action, three main families can be outlined: surfactants, oils and salts. Surfactants lower the surface tension of the sprayed liq. and can also promote the foliar uptake of active ingredients (Als). Oils are above all "penetrating agents" compatible mostly with lipophilic Als, such as specific graminicides. Salts are preferably hygroscopic and are useful with hydrophilic Als, for example bentazone, glufosinate or glyphosate.

CC 5-0 (Agrochemical Bioregulators)  
IT **Herbicides**  
(tank-mix adjuvants for)  
IT **1071-83-6**, Glyphosate. 25057-89-0, Bentazone 51276-47-2,  
Glufosinate  
RL: **AGR (Agricultural use)**; BSU (Biological study,  
unclassified); BIOL (Biological study); USES (Uses)  
(salts as tank-mix **adjuvants** for)

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 6 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:833492 HCAPLUS

DOCUMENT NUMBER: 137:306055

TITLE: Herbicidal compositions comprising phosphate  
ester-based surfactant adjuvants

INVENTOR(S): Lewis, David C.; Stridde, Howard M.

PATENT ASSIGNEE(S): Huntsman Petrochemical Corporation, USA

SOURCE: U.S. Pat. Appl. Publ., 10 pp., Cont.-in-part of U.S.  
Ser. No. 900,358.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002160918	A1	20021031	US 2002-121319	20020412
PRIORITY APPLN. INFO.:			US 1999-149542P	P 19990818
			US 1999-149553P	P 19990818
			US 2000-641225	B2 20000817
			US 2001-900358	A2 20010706

AB A surfactant useful for improving the bioefficacy of herbicides comprises:  
(i) phosphate monoesters of tallow amine ethoxylates, alone or in  
combination with phosphate diesters of tallow amine ethoxylates, or (ii)  
alkoxylated phosphate monoesters of tallow amine ethoxylates, alone or in  
combination with alkoxylated phosphate diesters of tallow amine  
ethoxylates. The herbicide compns. comprise a herbicidal active  
ingredient, a surfactant of the present invention, and optionally, one or  
more formulation aids. The herbicide compns. of the present invention  
have a reduced tendency to cause eye and skin irritation.

IC ICM A01N025-04

ICS A01N025-16

NCL 504363000

CC 5-3 (Agrochemical Bioregulators)

IT **Herbicides**

(herbicidal compns. comprising phosphate ester-based surfactant  
adjuvants)

IT **1071-83-6**, Glyphosate **38641-94-0**, Glyphosate,  
Mono-isopropylamine salt

RL: **AGR (Agricultural use)**; BSU (Biological study,  
unclassified); BIOL (Biological study); USES (Uses)

(herbicidal compns. comprising phosphate ester-based surfactant  
**adjuvants**, contg.)

L36 ANSWER 7 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:551600 HCAPLUS  
 DOCUMENT NUMBER: 137:105171  
 TITLE: Herbicide adjuvant ammonium sulfate suspensions in oils  
 INVENTOR(S): Highsmith, Ronald Earl  
 PATENT ASSIGNEE(S): Honeywell International Inc., USA  
 SOURCE: U.S., 13 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6423667	B1	20020723	US 2001-855481	20010515
PRIORITY APPLN. INFO.:			US 2001-855481	20010515
AB- Stable concd. suspensions, readily dispersible in water, comprise ammonium sulfate, a surfactant, and an oil. The ammonium sulfate particles are at least about 99 wt. % passable through a Tyler #48 sieve. The surfactant has an HLB rating from about 10 to about 15. Incorporation of 0.03-2 % by wt. methylthio-.alpha.-hydroxybutyric acid further enhances the stability and reduces the viscosity of the suspension. The oil is a hydrocarbon or other nonpolar oil having a viscosity of at least about 5 cP at 40.degree. C. The ammonium sulfate suspensions of the invention are useful as herbicide adjuvants.				
IC	ICM	A01N025-22		
	ICS	C05C003-00; B01F003-12		
NCL		504362000		
CC		5-3 (Agrochemical Bioregulators)		
IT		Agrochemical formulations		
<b>Herbicides</b>				
(herbicide adjuvant ammonium sulfate suspensions in)				
IT		75-60-5, Dimethylarsinic acid	94-75-7, 2,4-D, biological studies	
		120-36-5, 2-(2,4-Dichlorophenoxy)propionic acid	1071-83-6,	
		Glyphosate	2156-56-1, Sodium dichloroacetate	38641-94-0
RL: <b>AGR (Agricultural use)</b> ; BIOL (Biological study); USES (Uses)				
(herbicide <b>adjuvant</b> ammonium sulfate suspensions in oils)				
REFERENCE COUNT:	18	THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT		

L36 ANSWER 8 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:255992 HCAPLUS  
 DOCUMENT NUMBER: 136:258729  
 TITLE: Agrochemical fungicidal and herbicidal composition containing activity-enhancing adjuvants with reduced ecotoxicity  
 INVENTOR(S): Bean, Michael John; Ramsay, Julia  
 PATENT ASSIGNEE(S): Syngenta Limited, UK  
 SOURCE: PCT Int. Appl., 17 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2002026036 A1 20020404 WO 2001-GB4051 20010910  
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GH, GM,  
HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS,  
LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT,  
RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US,  
UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
RW: GH, GM, KE, LS, MW, MB, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,  
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,  
BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  
AU 2001086066 A5 20020408 AU 2001-86066 20010910  
PRIORITY APPLN. INFO.: GB 2000-23912 A 20000929  
WO 2001-GB4051 W 20010910

AB An agrochem. compn. having improved efficacy and reduced ecotoxicity comprising: (i) an agrochem. active ingredient, such as fungicide or herbicide, (ii) an alkyl amine alkoxylate adjuvant  $\{[H(OR)a]\}[H(OR)a']NCH_2CH(CH_2CH_3)(CH_2)_3CH_3$  (R = (un)branched C2-C4 alkylene(s); a + a' = 1-30) and salts and amine oxides thereof, and (iii) a secondary adjuvant a 0.5 % by wt. soln. in water of which has a dynamic surface tension of no more than 50mNm<sup>-1</sup> at 40ms.

IC ICM A01N025-30  
ICS A01N033-16; A01N057-20; A01N047-02; A01N039-02; A01N039-04  
CC 5-3 (Agrochemical Bioregulators)  
IT Fungicides  
Herbicides  
(activity-enhancing adjuvants with reduced ecotoxicity for fungicidal and herbicidal formulations)

IT 94-74-6, MCPA **1071-83-6**, Glyphosate 16484-77-8, Mecoprop-P 51276-47-2, Glufosinate **72178-02-0**, Fomesafen  
RL: **AGR (Agricultural use)**; BIOL (Biological study); USES (Uses)  
(activity-enhancing adjuvants with reduced ecotoxicity for herbicidal formulations contg.)

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 9 OF 45 HCAPLUS COPYRIGHT 2003 ACS  
ACCESSION NUMBER: 2002:208491 HCAPLUS  
DOCUMENT NUMBER: 137:1887  
TITLE: A new adjuvant blend for glyphosate herbicides  
AUTHOR(S): Burow, Richard F.; Penner, Donald; Roggenbuck, Frank C.; Wallick, David E.  
CORPORATE SOURCE: Dow Corning Corporation, Midland, MI, 48686-0994, USA  
SOURCE: ASTM Special Technical Publication (2001), STP 1414 (Pesticide Formulations and Application Systems: A New Century for Agricultural Formulations, Twenty First Volume), 246-253  
CODEN: ASTTA8; ISSN: 0066-0558  
PUBLISHER: American Society for Testing and Materials  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB With the advent of glyphosate-resistant crop seed, glyphosate has become the herbicide of choice for controlling weeds in a wide range of field crops. Many manufacturers of agricultural chems. are adding glyphosate herbicides to their herbicide product lines to serve this market need. An adjuvant blend has been developed specifically to enhance the performance of these glyphosate products. Organosilicone (OS) surfactants are

effective adjuvants to boost the performance of a no. of foliar-applied herbicides. They are effective adjuvants when used with glyphosate herbicides against a no. of weed species, but are weak or antagonistic on certain weeds, particularly lambsquarters and certain perennial grasses. Alkyl di-Ph oxide disulfonate (ADODS) surfactants, on the other hand, are effective on many of the weeds that are not enhanced by the organosilicone surfactants. It has been found that combinations of the organosilicone and ADODS surfactants are effective across a broad range of weed species. In greenhouse studies using a low rate of glyphosate, the use of a combination of a mixt. of OS and ADODS surfactants provided control of a broad range of weed species and provided rainfastness as well.

CC 5-3 (Agrochemical Bioregulators)

Section cross-reference(s): 46

IT **Herbicides**

Surfactants

(adjuvant blend for glyphosate)

IT 1071-83-6, Glyphosate

RL: **AGR (Agricultural use)**; BIOL (Biological study); USES (Uses)  
(adjuvant blend for)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 10 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:897575 HCAPLUS

DOCUMENT NUMBER: 136:162674

TITLE: Glyphosate and calcium: any solutions?

AUTHOR(S): Gauvrit, Christian

CORPORATE SOURCE: INRA, Dijon, Fr.

SOURCE: Phytoma (2001), 543, 10-13

CODEN: PYTOAU; ISSN: 0370-2723

PUBLISHER: Editions Le Carrousel

DOCUMENT TYPE: Journal

LANGUAGE: French

AB To overcome glyphosate antagonism by calcium ion (Ca<sup>2+</sup>) several remedies are suggested to farmers. Their assessment led authors to the following conclusions. Sulfuric acid, water de-ionization or water carbonation should not be advised, and the same is true for the adjuvants Heliosol and LI700. Ammonium sulfate fully restores glyphosate efficacy. However, Genamin (ethoxylated amine) is a better corrective up to 200 ppm Ca<sup>2+</sup>, but not at 400 ppm. This surprising observation was explained thanks to the anal. of dose-response curves. Under all conditions the combination Genamin + ammonium sulfate allows the highest glyphosate efficacy. Formulation can affect glyphosate sensitivity to Ca<sup>2+</sup> as shown with Sting ST (which contains ammonium sulfate) and Buggy (which contains high levels of ethoxylated amine). They are not affected by Ca<sup>2+</sup>, although only at efficacy levels sought in the practice for the latter.

CC 5-3 (Agrochemical Bioregulators)

IT **Herbicides**

(adjuvants for suppressing glyphosate and calcium antagonism)

IT 7783-20-2, Ammonium sulfate, biological studies 38641-94-0,

Roundup

RL: **AGR (Agricultural use)**; BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)

(adjuvants for suppressing glyphosate and calcium antagonism)

L36 ANSWER 11 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:868137 HCAPLUS

DOCUMENT NUMBER: 135:368017  
 TITLE: Organosiloxanes containing modified groups as adjuvants for pesticides  
 INVENTOR(S): Policello, George A.; Murphy, Gerald J.  
 PATENT ASSIGNEE(S): Crompton Corporation, USA  
 SOURCE: PCT Int. Appl., 22 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001089299	A1	20011129	WO 2001-US15911	20010517
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
EP 1282354	A1	20030212	EP 2001-935611	20010517
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
US 2002002114	A1	20020103	US 2001-861151	20010518
US 6534077	B2	20030318		

PRIORITY APPLN. INFO.: US 2000-205962P P 20000519  
 WO 2001-US15911 W 20010517

AB Modified organosilicones having siloxane backbones with pendant, terminal or intermediate amine and polyether groups are used as adjuvants for pesticides. The modified groups or the siloxane may be functionalized further with alkyl or alkyleneoxide groups.

IC ICM A01N025-30  
 ICS A01N057-20; C08L083-12; C08L083-08; C08G077-46; C08G077-388; A01N057-20; A01N025-30

CC 5-3 (Agrochemical Bioregulators)  
 Section cross-reference(s): 46

IT **Herbicides**

(organosiloxanes contg. modified groups as adjuvants for)

IT 57-13-6D, Urea, substituted, biological studies 61-82-5, Amitrole  
 65-85-0D, Benzoic acid, derivs., biological studies 66-22-8D, Uracil, derivs. 101-05-3D, Triazine, derivs. 122-59-8D, Phenoxyacetic acid, derivs. 290-87-9D, s-Triazine, derivs. **1071-83-6**, Glyphosate  
 1194-65-6, Dichlobenil 1582-09-8, Trifluralin 13684-56-5, Desmedipham  
 13684-63-4, Phenmedipham 19044-88-3, Oryzalin 20354-26-1, Methazole  
 25057-89-0, Bentazon 26471-56-7D, derivs. 27314-13-2, Norflurazon  
 29091-21-2, Prodiamine 33820-53-0, Isopropalin 37275-48-2D, Bipyridyl, compds. 38669-41-9D, Phenoxypropionic acid, derivs. 38669-42-0D, derivs. 40487-42-1, Pendimethalin 51338-27-3, Diclofop methyl  
 55512-33-9, Pyridate 59756-60-4, Fluridone 66441-23-4, Fenoxaprop ethyl 69806-40-2, Haloxyfop-methyl 74051-80-2, Sethoxydim  
 76578-12-6, Quizalofop 79241-46-6 81777-89-1, Clomazone 82558-50-7, Isoxaben 99129-21-2, Clethodim

RL: **AGR (Agricultural use); BIOL (Biological study); USES (Uses)**

(in herbicidal compns. contg. organosiloxanes with modified groups as  
adjuvants)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 12 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:761038 HCAPLUS

DOCUMENT NUMBER: 136:16598

TITLE: Glyphosate adjuvants

AUTHOR(S): Deschomets, Gilles

CORPORATE SOURCE: Monsanto, Fr.

SOURCE: Phytoma (2001); 541, 14-16

CODEN: PYTOAU; ISSN: 0370-2723

PUBLISHER: Editions Le Carrousel

DOCUMENT TYPE: Journal; General Review

LANGUAGE: French

AB A review. In France, all products which use glyphosate, a herbicidal  
active ingredient which is used in the form of salt, contain surfactants.  
The latter are essential since they allow the active mol. to penetrate the  
plant cuticle. The article reviews the different surfactants currently  
available and in use. They are as follows: ethoxylated fatty amines (from  
either tallow or coconut), phosphate esters, alkyl polyglucosides and  
propoxylated quaternary ammonium salts. Each of these additives is highly  
characteristic and each has specific effects, whether these may be  
physico-chem., biol. (efficacy) or toxicol. (product ranking, based solely  
on the presence of surfactants, ranges from non-classified, through Xi, to  
Xn).

CC 5-0 (Agrochemical Bioregulators)

IT **Herbicides**

Pesticide formulations

Surfactants

(glyphosate adjuvants)

IT **1071-83-6**, Glyphosate

RL: **AGR (Agricultural use)**; BIOL (Biological study); USES (Uses)

(glyphosate adjuvants)

L36 ANSWER 13 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:427377 HCAPLUS

DOCUMENT NUMBER: 135:15441

TITLE: Adjuvants for herbicidal compositions, providing  
enhanced effectiveness

INVENTOR(S): Brinker, Ronald J.; Dyszlewski, Andrew D.; Gillespie,  
Jane L.; Jones, Claude R.; Kramer, Richard M.; Pallas,  
Norman R.; Radke, Rodney O.; Ward, Anthony J. I.; Xu,  
Xiaodong C.

PATENT ASSIGNEE(S): Monsanto Company, USA

SOURCE: U.S., 40 pp., Cont.-in-part of U.S. 6,184,182.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 7

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6245713	B1	20010612	US 1999-298136	19990423
ZA 9709569	A	19980512	ZA 1997-9569	19971024

ZA 9709564	A	19980520	ZA 1997-9564	19971024
ZA 9709570	A	19980521	ZA 1997-9570	19971024
ZA 9709561	A	19980527	ZA 1997-9561	19971024
ZA 9709563	A	19980603	ZA 1997-9563	19971024
ZA 9709567	A	19980603	ZA 1997-9567	19971024
CN 1241902	A	20000119	CN 1997-180966	19971024
CN 1241903	A	20000119	CN 1997-180976	19971024
CN 1241904	A	20000119	CN 1997-181014	19971024
CN 1241905	A	20000119	CN 1997-181038	19971024
US 6184182	B1	20010206	US 1997-957750	19971024
EP 1138202	A2	20011004	EP 2001-116176	19971024
EP 1138202	A3	20030102		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, SI, LT, LV, FI, RO

WO 9833384	A1	19980806	WO 1998-US1684	19980130
W:	AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG			

WO 9833385	A1	19980806	WO 1998-US1841	19980130
W:	AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG			

AU 9860484	A1	19980825	AU 1998-60484	19980130
AU 724299	B2	20000914		
AU 9862582	A1	19980825	AU 1998-62582	19980130
AU 730047	B2	20010222		
US 6020287	A	20000201	US 1998-16773	19980130
EP 975224	A1	20000202	EP 1998-904789	19980130

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, FI

EP 979035	A1	20000216	EP 1998-903811	19980130
EP 979035	B1	20021204		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, FI

US 6172004	B1	20010109	US 1998-16101	19980130
NZ 337000	A	20010126	NZ 1998-337000	19980130
NZ 336999	A	20011026	NZ 1998-336999	19980130
AT 228765	E	20021215	AT 1998-903811	19980130
TW 440428	B	20010616	TW 1998-87101117	19980218
US 6479434	B1	20021112	US 2000-493446	20000128
US 6407042	B1	20020618	US 2000-534560	20000324
US 6475953	B1	20021105	US 2000-534772	20000324

PRIORITY APPLN. INFO.:

US 1996-29317P	P	19961025
US 1997-34887P	P	19970131
US 1997-39789P	P	19970304
US 1997-957750	A2	19971024
EP 1997-912922	A3	19971024

US 1997-957764	A1 19971024
US 1997-958149	A3 19971024
WO 1998-US1684	W 19980130
WO 1998-US1841	W 19980130

OTHER SOURCE(S): MARPAT 135:15441

AB A compn. comprises, dissolved or dispersed in water, an anionic exogenous chem. substance such as the herbicide glyphosate, together with: (i) alkyl ether surfactant(s)  $[R1O(CH_2CH_2O)_n[(CHR)_{20}]mR_2]$   $R_1$  = aliph. satd. or unsatd. C16-22 hydrocarbyl;  $n$  = 5-100;  $m$  = 0,1-5;  $R$  = H, Me or CHR<sub>2</sub>O;  $R_2$  = H, C1-4 alkyl or C2-4 acyl; and (ii) amine surfactant(s) each having a mol. structure that comprises (a) a hydrophobic moiety having one or a plurality of independently satd. or unsatd., branched or unbranched, aliph., alicyclic or arom. C3-20 hydrocarbyl or hydrocarbylene groups joined together by 0 to about 7 ether linkages and having in total about 8 to about 24 carbon atoms, and (b) a hydrophilic moiety comprising an amino group that is cationic or that can be protonated to become cationic, having attached directly thereto 1 to 3 oxyethylene groups or polyoxyethylene chains, these oxyethylene groups and polyoxyethylene chains comprising on av. 1 to about 50 oxyethylene units per surfactant mol., the hydrophobic moiety being attached either to the amino group or via an ether linkage to an oxyethylene unit. The wt. ratio of the alkyl ether surfactant(s) to the amine surfactant(s) is about 1:10 to about 10:1; and the alkyl ether and amine surfactants are present in total in an adjuvant amt. of about 0.05 to about 0.5 parts by wt. per part by wt. of the herbicide, expressed as acid equiv. Also provided are solid and liq. conc. compns. that can be dild., dissolved or dispersed in water to form such a plant treatment compn.

IC ICM A01N025-30

ICS A01N057-02

NCL 504206000

CC 5-3 (Agrochemical Bioregulators)

IT **Herbicides**

Pesticide formulations

(adjuvants for herbicidal compns., providing enhanced effectiveness)

IT 50-31-7, 2,3,6-TBA 71-55-6 75-99-0, Dalapon 85-34-7, Fenac  
 93-65-2, Mecoprop 94-74-6, MCPA 94-75-7, 2,4-D, biological studies  
 94-81-5, MCPB 94-82-6, 2,4-DB 112-05-0, Nonanoic acid 120-36-5,  
 Dichlorprop 124-58-3, Methylarsonic acid 132-66-1, Naptalam  
 133-90-4, Chloramben 145-73-3, Endothall 314-40-9, Bromacil  
**1071-83-6**, Glyphosate 1689-83-4, Ioxynil 1689-84-5, Bromoxynil  
 1702-17-6, Clopyralid 1918-00-9, Dicamba 1918-02-1, Picloram  
 3337-71-1, Asulam 3813-05-6, Benazolin 5329-14-6, Sulfamic acid  
 25057-89-0, Bentazon 35597-43-4, Bilanafos **38641-94-0**, Roundup  
**40465-66-5**, ammonium glyphosate 40843-25-2, Diclofop  
 50594-66-6, Acifluorfen 51276-47-2, Glufosinate 55335-06-3, Triclopyr  
 58667-63-3, Flamprop 59682-52-9, Fosamine 69335-91-7, Fluazifop  
 69806-34-4, Haloxyfop **72178-02-0**, Fomesafen 76578-12-6,  
 Quizalofop 77501-60-1, Fluoroglycofen 81334-34-1, Imazapyr  
 81335-37-7, Imazaquin 81335-77-5, Imazethapyr 84087-01-4, Quinclorac  
 87547-04-4, Flumiclorac 95617-09-7, Fenoxaprop 100728-84-5,  
 Imazamethabenz 104098-48-8, Imazameth 114311-32-9, Imazamox  
 RL: **AGR (Agricultural use)**; BIOL (Biological study); USES (Uses)  
 (adjuvants for herbicidal compns., providing enhanced effectiveness)

REFERENCE COUNT:

15

THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 14 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:396604 HCAPLUS

DOCUMENT NUMBER: 135:1671

TITLE: Surfactant adjuvants for herbicide compositions

INVENTOR(S): Stridde, Howard Meyer; Kirby, Andrew Francis; Ashrawi, Samir S.; Lewis, David Charles; Elsik, Curtis Michael

PATENT ASSIGNEE(S): Huntsman Petrochemical Corporation, USA

SOURCE: PCT Int. Appl., 36 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001037661	A1	20010531	WO 2000-US32129	20001122
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
EP 1237410	A1	20020911	EP 2000-978866	20001122
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
US 2003032558	A1	20030213	US 2002-175535	20020618
PRIORITY APPLN. INFO.: US 1999-166933P P 19991122				
WO 2000-US32129 W 20001122				

OTHER SOURCE(S): MARPAT 135:1671

AB The surfactant adjuvant comprises an amine-based surfactant, and a sulfosuccinate or sulfosuccinamate-based surfactant (prepn. given). The surfactant adjuvant combines the known surfactancy, or wetting characteristics, of sulfosuccinate- or sulfosuccinamate-based surfactants, with the proven bioefficacy of alkoxylated amine-based surfactants. Compsns. comprise a herbicide, such as glyphosate, a surfactant adjuvant of the invention, and optionally, one or more formulation aids. The herbicide compsns. of the invention are expected to have a reduced tendency to cause eye and skin irritation.

IC ICM A01N025-30

ICS A01N057-20; A01N057-20; A01N025-32; A01N025-30

CC 5-3 (Agrochemical Bioregulators)

Section cross-reference(s): 23

IT **Herbicides**

Pesticide formulations

Surfactants

(surfactant adjuvant component for herbicide compsns.)

IT **1071-83-6**, Glyphosate **38641-94-0**, RodeoRL: **AGR (Agricultural use)**; BIOL (Biological study); USES (Uses)

(surfactant adjuvant component for herbicide compsns.)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 15 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:283720 HCAPLUS  
 DOCUMENT NUMBER: 134:276883  
 TITLE: Adjuvant for a herbicidal composition  
 INVENTOR(S): Koenig, Shane John; Muir, Clifford Neale  
 PATENT ASSIGNEE(S): Nufarm Limited, Australia  
 SOURCE: PCT Int. Appl., 21 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001026463	A1	20010419	WO 2000-AU284	20000404
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
PRIORITY APPLN. INFO.:			AU 1999-3393	A 19991013
			AU 1999-4292	A 19991126
AB An adjuvant compn. for use with a herbicide comprises agriculturally- acceptable salt(s) and a surfactant component including an ammonium salt of an ethoxylated alc. phosphate ester and an amphoteric surfactant. IC ICM A01N025-30 CC 5-3 (Agrochemical Bioregulators) IT <b>Herbicides</b> Pesticide formulations (adjuvant for herbicidal compns.) IT <b>1071-83-6</b> , Glyphosate <b>38641-94-0</b> , Roundup RL: <b>AGR (Agricultural use)</b> ; BIOL (Biological study); USES (Uses) (adjuvant for herbicidal compns.) REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT				

L36 ANSWER 16 OF 45 HCAPLUS COPYRIGHT 2003 ACS  
 ACCESSION NUMBER: 2001:136937 HCAPLUS  
 DOCUMENT NUMBER: 134:174256  
 TITLE: Mannich condensate-based surfactant adjuvants for  
 herbicide formulations.  
 INVENTOR(S): Lewis, David Charles; Stridde, Howard Meyer  
 PATENT ASSIGNEE(S): Huntsman Petrochemical Corporation, USA  
 SOURCE: PCT Int. Appl., 38 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001011959	A1	20010222	WO 2000-US22594	20000817



W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RQ, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

BR 2000013319 A 20020402 BR 2000-13319 20000817

EP 1211937 A1 20020612 EP 2000-957523 20000817

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL

## PRIORITY APPLN. INFO.:

US 1999-149543P P 19990818

US 1999-149554P P 19990818

US 1999-149555P P 19990818

WO 2000-US22594 W 20000817

OTHER SOURCE(S): MARPAT 134:174256

AB Surfactants are given that improve the bioefficacy of herbicides. The surfactants (prepn. given) comprise: (i) primarily disubstituted alkylphenol or alkenylphenol Mannich condensate alkoxylates, in combination with monosubstituted alkylphenol or alkenylphenol Mannich condensate alkoxylates; (ii) primarily phosphate monoesters and diesters of disubstituted alkylphenol or alkenylphenol Mannich condensate alkoxylates, in combination with phosphate monoesters and diesters of monosubstituted alkylphenol or alkenylphenol Mannich condensate alkoxylates; and (iii) primarily alkoxylated phosphate monoesters and diesters of disubstituted alkylphenol or alkenylphenol Mannich condensate alkoxylates, in combination with alkoxylated phosphate monoesters and diesters of monosubstituted alkylphenol or alkenylphenol mannich condensates alkoxylates.

IC ICM A01N025-30

ICS A01N057-20; C11D001-44; C08G065-00; C08G014-00

CC 5-3 (Agrochemical Bioregulators)

Section cross-reference(s): 25

IT **Herbicides**

Pesticide formulations

Surfactants

(Mannich condensate-based surfactant adjuvants for herbicide formulations)

IT 1071-83-6, Glyphosate 38641-94-0, Rodeo

RL: **AGR (Agricultural use)**; BIOL (Biological study); USES (Uses)

(Mannich condensate-based surfactant **adjuvants** for herbicide formulations)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 17 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:136936 HCAPLUS

DOCUMENT NUMBER: 134:174255

TITLE: Phosphate ester-based surfactant adjuvants for herbicide formulations.

INVENTOR(S): Lewis, David Charles; Stridde, Howard Meyer

PATENT ASSIGNEE(S): Huntsman Petrochemical Corporation, USA

SOURCE: PCT Int. Appl., 29 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001011958	A1	20010222	WO 2000-US22593	20000817
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
BR 2000013328	A	20020402	BR 2000-13328	20000817
EP 1204318	A1	20020515	EP 2000-957522	20000817
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL				
PRIORITY APPLN. INFO.:			US 1999-149542P	P 19990818
			US 1999-149553P	P 19990818
			WO 2000-US22593	W 20000817
OTHER SOURCE(S): MARPAT 134:174255				
AB	Surfactants that improve the bioefficacy of herbicides are given. The surfactants (prepn. given) comprise phosphate monoesters of tallow amine ethoxylates, alone or in combination with phosphate diesters of tallow amine ethoxylates, or alkoxylated phosphate monoesters of tallow amine ethoxylates, alone or in combination with alkoxylated phosphate diesters of tallow amine ethoxylates. Compns. comprise a herbicide, a surfactant of the present invention, and optionally, one or more formulation aids. The herbicide compns. have a reduced tendency to cause eye and skin irritation.			
IC	ICM A01N025-30			
	ICS A01N057-20			
CC	5-3 (Agrochemical Bioregulators)			
	Section cross-reference(s): 23			
IT	<b>Herbicides</b> Pesticide formulations Surfactants (phosphate ester-based surfactant adjuvants for herbicide formulations)			
IT	<b>1071-83-6</b> , Glyphosate <b>38641-94-0</b> , Rodeo RL: <b>AGR (Agricultural use)</b> ; BIOL (Biological study); USES (Uses) (phosphate ester-based surfactant <b>adjuvants</b> for herbicide formulations)			
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT				

L36 ANSWER 18 OF 45 HCAPLUS COPYRIGHT 2003 ACS  
 ACCESSION NUMBER: 2001:136935 HCAPLUS  
 DOCUMENT NUMBER: 134:174254  
 TITLE: Polyether diamine surfactant adjuvants for herbicides  
 INVENTOR(S): Ashrawi, Samir S.; Stridde, Howard Meyer  
 PATENT ASSIGNEE(S): Huntsman Petrochemical Corporation, USA  
 SOURCE: PCT Int. Appl., 26 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent

LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001011957	A1	20010222	WO 2000-US22542	20000817
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
BR 2000013310	A	20020409	BR 2000-13310	20000817
EP 1204317	A1	20020515	EP 2000-955624	20000817
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL				
US 6420311	B1	20020716	US 2000-641228	20000817
PRIORITY APPLN. INFO.:				
			US 1999-149541P	P 19990818
			US 1999-149573P	P 19990818
			WO 2000-US22542	W 20000817
OTHER SOURCE(S): MARPAT 134:174254				
AB Surfactants which improve the bioefficacy of herbicides, are given. The surfactants comprise alkoxylated polyether diamines and/or esterified alkoxylated polyether diamines, such of ethoxylated Jeffamine XTJ-511, used as an adjuvant for glyphosate.				
IC ICM A01N025-30				
ICS A01N057-20; C11D001-44; C08G065-00				
CC 5-3 (Agrochemical Bioregulators)				
IT <b>Herbicides</b>				
Pesticide formulations				
(polyether diamine surfactant adjuvants for herbicides)				
IT <b>1071-83-6, Glyphosate 38641-94-0, Rodeo</b>				
RL: <b>AGR (Agricultural use); BIOL (Biological study); USES (Uses)</b>				
(polyether diamine surfactant <b>adjuvants</b> for herbicides)				
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT				

L36 ANSWER 19 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:78158 HCAPLUS

DOCUMENT NUMBER: 134:111648

TITLE: Hybrid ionic phosphorus surfactant adjuvants for herbicides

INVENTOR(S): Reiersen, Robert Lee

PATENT ASSIGNEE(S): Rhodia Inc., USA

SOURCE: PCT Int. Appl., 23 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2001006852 A2 20010201 WO 2000-US20213 20000725  
WO 2001006852 A3 20010809  
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,  
CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,  
HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,  
LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,  
SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU,  
ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,  
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ,  
CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG  
US 6329322 B1 20011211 US 2000-624933 20000725  
EP 1204315 A2 20020515 EP 2000-950658 20000725  
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, SI, LT, LV, FI, RO, MK, CY, AL  
BR 2000012785 A 20020618 BR 2000-12785 20000725  
PRIORITY APPLN. INFO.: US 1999-145719P P 19990727  
WO 2000-US20213 W 20000725

AB Aq. compns. having increased stability and enhanced bioefficacy comprising  
a herbicide and a phosphate or phosphonate amphoteric surfactant having  
multiple ionic charges. A suitable adjuvant is the phosphorylation product of  
Rhodameen C-5. The preferred herbicide is glyphosate.  
IC ICM A01N025-30  
CC 5-3 (Agrochemical Bioregulators)  
IT **Herbicides**  
Surfactants  
(amphoteric phosphate or phosphonate surfactant adjuvants for  
herbicides)  
IT **1071-83-6, Glyphosate 38641-94-0, Rodeo**  
RL: **AGR (Agricultural use); BIOL (Biological study); USES (Uses)**  
(amphoteric phosphate or phosphonate surfactant **adjuvants** for  
herbicides)

L36 ANSWER 20 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:10564 HCAPLUS  
DOCUMENT NUMBER: 134:52636  
TITLE: Surfactant blends containing organosilicone  
surfactants and diphenyl oxide sulfonate surfactants  
useful as agricultural adjuvants  
INVENTOR(S): Burow, Richard Frederick; Wallick, David Edward;  
Schulz, William James, Jr.  
PATENT ASSIGNEE(S): Dow Corning Corp., USA  
SOURCE: Eur. Pat. Appl., 13 pp.  
CODEN: EPXXDW  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1064844	A1	20010103	EP 2000-112189	20000607
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2001048703	A2	20010220	JP 2000-203095	20000630
PRIORITY APPLN. INFO.: US 1999-343504 A 19990630				
OTHER SOURCE(S): MARPAT 134:52636				

AB A surfactant blends comprising (a) an organosilicone surfactant  $R_3SiO(R_2SiO)_x(RR_1SiO)_ySiR_3$  ( $R$  = monovalent hydrocarbon;  $R_1$  = polyoxyalkylene;  $x = 0-3$ ;  $y = 1-3$ ), and (b) an alkyl diphenyloxide sulfonate surfactant are used as agricultural adjuvants. The blends provide enhanced performance of certain herbicides such as glyphosate and glufosinate. Benefits include rainfastness and control of difficult weeds such as giant foxtail and velvetleaf beyond what can be achieved with conventional surfactants.

IC ICM A01N025-30

CC 5-3 (Agrochemical Bioregulators)

IT **Herbicides**

(surfactant blends contg. organosilicones and di-Ph oxide sulfonates as adjuvants for)

IT **1071-83-6, Accord 38641-94-0, Roundup 77182-82-2,**

Glufosinateammonium **81591-81-3, Glyphosatetrimesium**

RL: **AGR (Agricultural use); BIOL (Biological study); USES (Uses)**

(surfactant blends contg. organosilicones and di-Ph oxide sulfonates as adjuvants for)

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 21 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:814247 HCAPLUS

DOCUMENT NUMBER: 133:345903

TITLE: Herbicide formulation adjuvants.

INVENTOR(S): Killick, Robert William; Killick, Andrew Robert; Jones, Peter William; Wrigley, Peter Ronald; Morrison, John David

PATENT ASSIGNEE(S): Victorian Chemicals International Pty., Ltd., Australia

SOURCE: PCT Int. Appl., 33 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000067573	A1	20001116	WO 2000-AU416	20000505
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
AU 733300	B2	20010510	AU 2000-42761	20000505
PRIORITY APPLN. INFO.:			AU 1999-175	A 19990505
			WO 2000-AU416	W 20000505

AB The title adjuvants comprise: (a) .ltoreq.75 % by wt. lipophilic solvent(s); (b) .ltoreq.50 % by wt. plant nutrient(s) (e.g. ammonium salts of inorg. anions); and (c) .ltoreq.50 % mixt. of cationic emulsifiers, including surfactants which exhibit cationic characteristic in acidic conditions.

IC ICM A01N025-30  
 ICS A01N025-02; A01N057-20  
 CC 5-3 (Agrochemical Bioregulators)  
 IT **Herbicides**  
 Pesticide formulations  
 (herbicide formulation adjuvants)  
 IT **1071-83-6**, Glyphosate **38641-94-0**, Roundup  
 RL: **AGR (Agricultural use)**; BIOL (Biological study); USES (Uses)  
 (herbicide formulation **adjuvants**)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 22 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:725403 HCAPLUS

DOCUMENT NUMBER: 133:277516

TITLE: A herbicidal composition containing an activity-enhancing adjuvant

INVENTOR(S): Cutler, Julia Lynne; Bean, Michael John; Seville, Antony George

PATENT ASSIGNEE(S): Zeneca Ltd., UK

SOURCE: PCT Int. Appl., 21 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000059302	A1	20001012	WO 2000-GB1062	20000321
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
EP 1164845	A1	20020102	EP 2000-911114	20000321
EP 1164845	B1	20030521		
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO			
BR 2000009515	A	20020416	BR 2000-9515	20000321
JP 2002541075	T2	20021203	JP 2000-608879	20000321
BG 106055	A	20020531	BG 2001-106055	20011026
PRIORITY APPLN. INFO.:			GB 1999-7669	A 19990401
			WO 2000-GB1062	W 20000321

AB An aq. herbicidal compn. comprises an active ingredient, such as salt of glyphosate, paraquat or fomesafen, and an activity-enhancing adjuvant of formula X(R30)aR4NR2R1 (R1, R2 = H, lower alkyl, etc.; R30 = ethoxy, propoxy, or butoxy, or mixt. thereof; R4 = linear or branched chain alkylene; X = OH, lower alkyloxy, etc.), and salts thereof. The adjuvant can be used in the form of salt with glyphosate or with an acidic alkylpolyglycicide surfactant.

IC ICM A01N025-30  
 ICS A01N057-20

CC 5-3 (Agrochemical Bioregulators)

IT **Herbicides**

Pesticide formulations

(herbicidal compn. contg. activity-enhancing adjuvant)

IT **1071-83-6D**, Glyphosate, salt **1910-42-5**, Paraquat  
 dichloride **4685-14-7D**, Paraquat, salt **70901-12-1**,  
 Glycine, N-(phosphonomethyl)-, potassium salt **72178-02-0D**,  
 Fomesafen, salt **81591-81-3**, Glyphosate trimesium  
**300555-09-3 300555-10-6**

RL: **AGR (Agricultural use)**; BIOL (Biological study); USES (Uses)  
 (in herbicidal compn. contg. activity-enhancing **adjuvant**)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 23 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:608520 HCAPLUS

DOCUMENT NUMBER: 133:173398

TITLE: Quaternary ammonium glycoside surfactant as an  
 adjuvant for herbicide and fertilizer formulations

INVENTOR(S): Gustavsson, Bodil

PATENT ASSIGNEE(S): Akzo Nobel NV, Neth.

SOURCE: PCT Int. Appl., 34 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000049870	A1	20000831	WO 2000-SE261	20000210
W:	AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
SE 9900638	A	20000825	SE 1999-638	19990224
SE 514862	C2	20010507		
CA 2356842	AA	20000831	CA 2000-2356842	20000210
BR 2000008217	A	20011106	BR 2000-8217	20000210
EP 1154687	A1	20011121	EP 2000-911526	20000210
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO			
AU 756823	B2	20030123	AU 2000-33392	20000210
PRIORITY APPLN. INFO.:			SE 1999-638	A 19990224
			WO 2000-SE261	W 20000210

OTHER SOURCE(S): MARPAT 133:173398

AB The invention relates to the use of a quaternary ammonium glycoside surfactant as an adjuvant for fertilizers or pesticides, such as herbicides. The surfactant contains at least one hydrocarbon group with 6-24 carbon atoms and at least one quaternary ammonium group, where at least one substituent is an alkyleneoxy group, which is connected to a saccharide residue by a glycosidic bond. These quaternary ammonium

glycoside surfactants have improved biodegradability. They also improve the uptake and efficacy of fertilizers and herbicides.

IC ICM A01N025-30

ICS A01N057-20; C05G003-06

CC 5-3 (Agrochemical Bioregulators)

Section cross-reference(s): 19

IT Agrochemical formulations

#### Herbicides

##### Surfactants

(quaternary ammonium glycoside surfactant as an adjuvant for herbicide and fertilizer formulations)

IT **Fertilizers**

RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)

(quaternary ammonium glycoside surfactant as an adjuvant for herbicide and fertilizer formulations)

IT 7783-20-2, Ammonium sulfate, biological studies **38641-94-0**,

Roundup

RL: **AGR (Agricultural use)**; BIOL (Biological study); USES (Uses)

(quaternary ammonium glycoside surfactant as an **adjuvant** for herbicide and fertilizer formulations)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 24 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:513441 HCAPLUS

DOCUMENT NUMBER: 133:116189

TITLE: Pesticide formulation adjuvant containing topped or peaked alcohol alkoxylates and conventional alcohol alkoxylates

INVENTOR(S): Brumbaugh, Ernest H.

PATENT ASSIGNEE(S): Amway Corporation, USA

SOURCE: PCT Int. Appl., 22 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000042847	A1	20000727	WO 2000-US945	20000114
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				

US 6235300 B1 20010522 US 1999-233796 19990119

PRIORITY APPLN. INFO.: US 1999-233796 A1 19990119

AB The pesticide formulation adjuvant includes at least one surfactant selected from topped alc. alkoxylates and/or peaked alc. alkoxylates and in combination with a conventional alc. alkoxylate. Thus, Neodol 23-6.5T, a topped formulation adjuvant, outperformed Nonoxynol 10 in formulations of BeaconJ and RoundupJ, for giant foxtail control.



IC ICM A01N025-30  
 ICS A01N057-20; A01N043-40; A01N047-36; A01N043-50  
 CC 5-4 (Agrochemical Bioregulators)  
 IT **Herbicides**  
 (herbicide formulation adjuvants contg. topped or peaked alc.  
 alkoxyates and conventional alc. alkoxyates)  
 IT **1910-42-5**, Gramoxone **38641-94-0**, Roundup 79277-27-3,  
 Pinnacle 81335-77-5, Pursuit 86209-51-0, Beacon 111991-09-4, Accent  
 RL: **AGR (Agricultural use)**; BIOL (Biological study); USES (Uses)  
 (herbicide formulation **adjuvants** contg. topped or peaked alc.  
 alkoxyates and conventional alc. alkoxyates)  
 REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 25 OF 45 HCAPLUS COPYRIGHT 2003 ACS  
 ACCESSION NUMBER: 2000:12611 HCAPLUS  
 DOCUMENT NUMBER: 132:60494  
 TITLE: Adjuvants for dry herbicide formulations  
 INVENTOR(S): Claude, Jean-Pierre; Favier, Patrick; Gabard, Jerome;  
 Green, Jerry M.; Huby, Jean-Pierre; Thalinger,  
 Pierre-Paul  
 PATENT ASSIGNEE(S): E.I. Du Pont de Nemours and Company, USA  
 SOURCE: Eur. Pat. Appl., 29 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 968649	A1	20000105	EP 1998-401656	19980702

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO

PRIORITY APPLN. INFO.: EP 1998-401656 19980702  
 AB This invention pertains to dry formulations of certain fatty alc.  
 ethoxylated surfactants, which when used at relatively low concns.,  
 enhance the biol. activity of herbicides. The herbicides are rimsulfuron,  
 thifensulfuron-Me, nicosulfuron, etc.

IC ICM A01N025-30  
 CC 5-3 (Agrochemical Bioregulators)  
 IT **Herbicides**

Pesticide formulations  
 (activity-enhancing adjuvants for dry herbicide formulations)  
 IT **1071-83-6**, Glyphosate 74223-64-6 76578-13-7, Quizalofop-methyl  
 79277-27-3, Thifensulfuronmethyl 101200-48-0, Tribenuron-methyl  
 111991-09-4, Nicosulfuron 122931-48-0, Rimsulfuron 144740-53-4,  
 Flupyr-sulfuron-methyl 190314-43-3 192708-91-1 209790-38-5  
 RL: **AGR (Agricultural use)**; BIOL (Biological study); USES (Uses)  
 (activity-enhancing **adjuvants** for dry herbicidal formulations  
 of)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 26 OF 45 HCAPLUS COPYRIGHT 2003 ACS  
 ACCESSION NUMBER: 1999:733024 HCAPLUS  
 DOCUMENT NUMBER: 131:318938

TITLE: N-acylsarcosinates as glyphosate adjuvants  
 INVENTOR(S): Crudden, Joseph J.  
 PATENT ASSIGNEE(S): Hampshire Chemical Corp., USA  
 SOURCE: U.S., 5 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5985798	A	19991116	US 1998-90833	19980604
ZA 9903311	A	19991115	ZA 1999-3311	19990513
CA 2334029	AA	19991209	CA 1999-2334029	19990521
WO 9962338	A1	19991209	WO 1999-US11353	19990521

W: AU, BR, CA, CN, IN, JP, KR, MX, SG

RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE

AU 9940094	A1	19991220	AU 1999-40094	19990521
BR 9911187	A	20010213	BR 1999-11187	19990521
EP 1083793	A1	20010321	EP 1999-923282	19990521
R: DE, ES, FR, GB, IT, NL, IE				
JP 2002516826	T2	20020611	JP 2000-551610	19990521

PRIORITY APPLN. INFO.:

US 1998-90833 A 19980604  
 WO 1999-US11353 W 19990521

AB An adjuvant for glyphosate having increased activity, lower irritancy and lower toxicity than conventional adjuvants, is given. The adjuvant is C8 to C22 sarcosinate or sarcosinate salt, such as sodium cocoylsarcosinate, sodium lauroylsarcosinate, or combinations thereof, which is combined with glyphosate in low concns. and provides effective activity.

IC ICM A01N057-00

NCL 504206000

CC 5-3 (Agrochemical Bioregulators)

IT **Herbicides**

Pesticide formulations

(N-acylsarcosinates as glyphosate herbicide adjuvants)

IT **1071-83-6P**, Glyphosate **38641-94-0P**, Roundup

RL: **AGR (Agricultural use)**; MOA (Modifier or additive use); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)

(N-acylsarcosinates as glyphosate herbicide **adjuvants**)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 27 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1999:724437 HCAPLUS

DOCUMENT NUMBER: 132:32105

TITLE: New adjuvants for glyphosate

AUTHOR(S): Woznica, Zenon; Milkowski, Piotr; Bekierz, Gerard; Naraniecki, Bronislaw

CORPORATE SOURCE: Katedra Uprawy Roli Roslin, Akademia Rolnicza, Poznon, 60-623, Pol.

SOURCE: Progress in Plant Protection (1998), 38(2), 695-697

CODEN: PPLPF3; ISSN: 1427-4337

PUBLISHER: Panstwowe Wydawnictwo Rolnicze i Lesne, Oddzial w Poznaniu

DOCUMENT TYPE: Journal  
LANGUAGE: Polish

AB Greenhouse and field expts. were conducted to det. glyphosate phytotoxicity to various bioassay species as influenced by com. and multicomponent exptl. adjuvants. Glyphosate was applied with water contg. low and high calcium level, at 80 to 320 L/ha. Adjuvants differed greatly in efficacy enhancement of glyphosate. Exptl. adjuvants AR-524 and AR-531 showed a great potential as a spray additives for glyphosate applied in hard water, regardless of spray carrier vol.

CC 5-3 (Agrochemical Bioregulators)

IT **Herbicides**

(effect of adjuvants on the herbicidal activity of glyphosate, as related to water hardness of the soln.)

IT 1071-83-6, Glyphosate 38641-94-0, Roundup

RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)

(effect of adjuvants on the herbicidal activity of glyphosate, as related to water hardness of the soln.)

L36 ANSWER 28 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1999:309041 HCAPLUS

DOCUMENT NUMBER: 130:334088

TITLE: The potential of corn syrup as an adjuvant for postemergence herbicides

AUTHOR(S): Roggenbuck, Frank C.; Kells, James J.; Penner, Donald  
CORPORATE SOURCE: Department of Crop and Soil Sciences, Michigan State University, East Lansing, MI, 48824, USA

SOURCE: ASTM Special Technical Publication (1998), STP 1347(Pesticide Formulations and Application Systems: 18th Volume), 330-338

CODEN: ASTTA8; ISSN: 0066-0558

PUBLISHER: ASTM

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Corn syrup was evaluated as an activator adjuvant with several postemergence herbicides in greenhouse and field studies. The greatest enhancement of herbicide activity was obsd. with high fructose corn syrup applied in combination with ammonium sulfate and a nonionic surfactant to anionic herbicides, such as glyphosate and glufosinate, for control of grass species such as giant foxtail.

CC 5-3 (Agrochemical Bioregulators)

IT **Herbicides**

Pesticide formulations

(corn syrup as activator herbicide adjuvant).

IT 1071-83-6, Glyphosate 38641-94-0, Roundup 51276-47-2,

Glufosinate 77182-82-2, Glufosinate ammonium 81335-77-5, Imazethapyr

81591-81-3, Touchdown 111991-09-4, Nicosulfuron 113036-87-6,

Primisulfuron

RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)

(corn syrup as activator herbicide adjuvant)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 29 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1999:195353 HCAPLUS

DOCUMENT NUMBER: 130:292752

TITLE: Evaluation of a novel adjuvant for use with glyphosate on perennial ryegrass

AUTHOR(S): Murray, R. J.; Gaskin, R. E.; Grassam, M. R.  
CORPORATE SOURCE: Forest Research, Rotorua, N. Z.  
SOURCE: Proceedings of the New Zealand Plant Protection  
Conference (1998), 51st, 162-165  
CODEN: PNZCEJ; ISSN: 1172-0719  
PUBLISHER: New Zealand Plant Protection Society  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Glyphosate is used extensively for pasture renovation, with an organosilicon surfactant when treating ryegrass (*Lolium perenne*). The effect of a novel, nonsilicone surfactant, Browndown Adjuvant, on the performance of glyphosate on perennial ryegrass was detd. and compared to the organosilicon surfactant, Pulse. Spray retention, uptake and translocation of glyphosate were quantified. Comparative efficacy of spray treatments was detd. in pot and field trials. Browndown increased the speed and quantity of glyphosate uptake, with no adverse effects on herbicide translocation. At the recommended rate (0.25% vol./vol.), Browndown reduced spray retention compared to Pulse (0.1% vol./vol.), but provided faster brown-out of foliage and equiv. herbicide efficacy on glyphosate-tolerant ryegrass in spring.

CC 5-3 (Agrochemical Bioregulators)

IT **Herbicides**

*Lolium perenne*

Pesticide formulations

(Browndown adjuvant for use with glyphosate on perennial ryegrass)

IT **38641-94-0**, Roundup 42874-03-3

RL: **AGR (Agricultural use)**; BPR (Biological process); BSU

(Biological study, unclassified); BIOL (Biological study); PROC (Process);

USES (Uses)

(Browndown **adjuvant** for use with glyphosate on perennial ryegrass)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 30 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1998:608364 HCAPLUS

DOCUMENT NUMBER: 129:212962

TITLE: Nonionic siloxane blends with surfactants, as adjuvants in herbicide formulations

INVENTOR(S): Policello, George; Stevens, Peter

PATENT ASSIGNEE(S): OSI Specialties, Inc., USA; Crompton Corporation

SOURCE: Eur. Pat. Appl., 9 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 862857	A1	19980909	EP 1998-103601	19980302
EP 862857	B1	20030528		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
US 6221811	B1	20010424	US 1998-26867	19980220
CA 2230769	AA	19980906	CA 1998-2230769	19980302
CA 2230769	C	20020226		

AU 9856407	A1	19980910	AU 1998-56407	19980303
AU 728878	B2	20010118		
JP 10291903	A2	19981104	JP 1998-54917	19980306
JP 2891983	B2	19990517		
BR 9800847	A	20000502	BR 1998-847	19980306
ZA 9803049	A	19981020	ZA 1998-3049	19980409

PRIORITY APPLN. INFO.: US 1997-38599P P 19970306

AB Disclosed are compns. of nonionic siloxane alkoxyates (Markush given) with aminopolyalkyleneoxide surfactants, which are useful as adjuvants for herbicides. These compns. overcome the antagonism assocd. with nonionic trisiloxane alkoxyates on pesticide uptake in plants.

IC ICM A01N025-30

ICS B01F017-00; A01N057-20

CC 5-3 (Agrochemical Bioregulators)

IT **Herbicides**

Pesticide formulations

(nonionic siloxane blends with surfactants, as adjuvants in herbicide formulations)

IT 61-82-5, Amitrole **1071-83-6**, Glyphosate 1194-65-6, Dichlobenil 1582-09-8, Trifluralin 13684-56-5, Desmedipham 13684-63-4, Phenmedipham 19044-88-3, Oryzalin 20354-26-1, Methazole 25057-89-0, Bentazon 29091-21-2, Prodiamine 33820-53-0, Isopropalin 40487-42-1, Pendimethalin 51276-47-2, Glufosinate 51338-27-3, Diclofop-methyl 55512-33-9, Pyridate 66441-23-4, Fenoxaprop-ethyl 69806-40-2, Haloxyfop-methyl 74051-80-2, Sethoxydim 76578-12-6, Quizalofop 79241-46-6 81777-89-1, Clomazone 82558-50-7, Isoxaben 99129-21-2, Clethodim

RL: **AGR (Agricultural use)**; BIOL (Biological study); USES (Uses)

(nonionic siloxane blends with surfactants, as **adjuvants** in herbicide formulations)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 31 OF 45. HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1998:160918 HCAPLUS

DOCUMENT NUMBER: 128:254084

TITLE: Polyglycerin monoester agents for enhancing effectiveness of agrochemicals and agrochemical compositions.

INVENTOR(S): Endo, Toshio

PATENT ASSIGNEE(S): Daicel Chemical Industries, Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10067602	A2	19980310	JP 1996-241123	19960823
PRIORITY APPLN. INFO.:			JP 1996-241123	19960823

AB Agents that enhance the effectiveness of agrochems. comprise polyglycerin fatty acid esters with a content of monoester RCO[OCH<sub>2</sub>CH(OH)CH<sub>2</sub>]nOH (R = C<sub>6</sub>-21 alkyl, alkenyl, hydroxyalkyl; n.gtoreq.4) of >70% (peak area ratio measured by column chromatog. with a UV absorption detector). Agrochem. compns. contain the adjuvant and an agrochem. selected from among

antimicrobials, insecticides, acaricides, herbicides, and plant growth regulators. Thus, lauric acid and glycidol were reacted in the presence of phosphoric acid to obtain hexaglycerin monolaurate (monoester content 87.7%). Nissorun V and Osadan formulations contg. 0.1% hexaglycerin monolaurate resulted in a mortality rate of Kanzawa spider mite of 100%.

IC ICM A01N025-02

ICS A01N025-30

CC 5-6 (Agrochemical Bioregulators)

IT **Acaricides**

Agrochemical formulations

Antimicrobial agents

**Herbicides**

**Insecticides**

(polyglycerin monoesters as agents for enhancing effectiveness of agrochems. and compns. contg. the adjuvants)

IT **Hormones, plant**

RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)

(polyglycerin monoesters as agents for enhancing effectiveness of agrochems. and compns. contg. the adjuvants)

IT 330-54-1, Karmex **38641-94-0**, Roundup 71048-99-2, Herbiace

RL: **AGR (Agricultural use)**; BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)

(polyglycerin monoesters as agents for enhancing effectiveness of agrochems. and compns. contg. **adjuvants**)

L36 ANSWER 32 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1998:35715 HCAPLUS

DOCUMENT NUMBER: 128:111839

TITLE: Effect of drift control adjuvants and a surfactant on a herbicide applied at conventional and ultralow volumes

AUTHOR(S): Wills, G. D.; Hanks, J. E.; Jones, E. J.; Mack, R. E.

CORPORATE SOURCE: Delta Research & Extension Center, Stoneville, MS, 38776, USA

SOURCE: Brighton Crop Protection Conference--Weeds (1997), (Vol. 2), 539-542

CODEN: BCPWE2; ISSN: 0955-1514

PUBLISHER: British Crop Protection Council

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A field expt. evaluated the effect of a surfactant and three drift control adjuvants on the efficacy and drift of a herbicide applied at a conventional and an ultralow spray vol. Weed control was enhanced by the addn. of the surfactant. Each drift control adjuvant reduced the amt. of herbicide drift with no adverse effect on efficacy. Applications at the ultralow spray vol. were often as effective as at the conventional spray vol.

CC 5-3 (Agrochemical Bioregulators)

IT **Herbicides**

Surfactants

(effect of drift control adjuvants and surfactant on herbicide applied at conventional and ultralow vols.)

IT **4685-14-7, Paraquat**

RL: **AGR (Agricultural use)**; BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)

(effect of drift control **adjuvants** and surfactant on herbicide applied at conventional and ultralow vols.)

L36 ANSWER 33 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1998:13808 HCAPLUS  
DOCUMENT NUMBER: 128:85447  
TITLE: Succinic acid derivative adjuvant surfactants for glyphosate  
INVENTOR(S): Auda, Mahroussa; Reekmans, Steven Irene Jozef  
PATENT ASSIGNEE(S): Imperial Chemical Industries PLC, UK; Auda, Mahroussa; Reekmans, Steven Irene Jozef  
SOURCE: PCT Int. Appl., 14 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9747199	A1	19971218	WO 1997-GB1484	19970602
W: AU, BR, CA, JP, KR, MX, NZ, US				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9729717	A1	19980107	AU 1997-29717	19970602
EP 906018	A1	19990407	EP 1997-924150	19970602
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
BR 9709777	A	19990810	BR 1997-9777	19970602
NZ 332929	A	20000825	NZ 1997-332929	19970602
JP 2000511924	T2	20000912	JP 1998-501335	19970602
ZA 9705041	A	19971211	ZA 1997-5041	19970606
KR 2000016480	A	20000325	KR 1998-710065	19981209

PRIORITY APPLN. INFO.: GB 1996-12197 A 19960611  
WO 1997-GB1484 W 19970602

AB Surfactant adjuvants R1CH(CONR3R4)CHR2(COR5) [R1,R2 = H or C6-22 alkyl or alkenyl; R3 = polyhydroxy hydrocarbyl; R4 = H or C1-22 hydrocarbyl; R5 = (un)substituted NH2 or alkylene oxide residues] are used particularly with glyphosate to kill weed species difficult to kill. Examples of such weeds are dicotyledons, such as *Chenopodium album*, *Solanum nigrum*, *Lactuca saligna*, *Amaranthus retroflexus*, *Erigeron canadensis* and *Cirsium arvense* and perennial monocotyledons, such as *Lolium perenne*, *Convolvulus arvensis* and, esp. *Agropyron repens*.

IC ICM A01N057-20

CC 5-3 (Agrochemical Bioregulators)

IT **Herbicides**

Surfactants

(succinic acid deriv. adjuvant surfactants for glyphosate)

IT 1071-83-6, Glyphosate 38641-94-0, Roundup

RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
(adjuvant surfactants for glyphosate)

L36 ANSWER 34 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1997:766704 HCAPLUS  
DOCUMENT NUMBER: 128:44904  
TITLE: Optimizing glyphosate performance with adjuvants  
AUTHOR(S): de Villiers, B. L.; Lindeque, R. C.; Smit, H. A.  
CORPORATE SOURCE: Small Grain Inst., Agricultural Research Council,

SOURCE: Bethlehem, 9700, S. Afr.  
South African Journal of Plant and Soil (1997), 14(4),  
146-148  
CODEN: SAJSEV; ISSN: 0257-1862  
PUBLISHER: Bureau for Scientific Publications  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Glyphosate is a non-selective herbicide which is extremely sensitive to antagonism by salts in the spray soln. and to environmental conditions at application. Various adjuvants were evaluated with glyphosate in glasshouse and field expts. with the aim of identifying suitable adjuvants. In the glasshouse, EXP94KG1 was the most effective adjuvant in water carriers with low and high calcium chloride content. In the field, EXP94KG1 and Frigate were both more effective than Armoblen 650, Bladbuff 5 and Beef-up AS. Frigate performance was similar to that of EXP94KG1 in the field, probably as a result of the lower carrier vol. used in the field.

CC 5-3 (Agrochemical Bioregulators)

IT **Herbicides**

(optimizing glyphosate performance with adjuvants)

IT **1071-83-6, Glyphosate**

RL: **AGR (Agricultural use)**; BIOL (Biological study); USES (Uses)  
(optimizing glyphosate performance with **adjuvants**)

L36 ANSWER 35 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1997:672251 HCAPLUS

DOCUMENT NUMBER: 127:315763

TITLE: Glyphosate formulations with enhanced activity  
comprising hydroxyalkylammonium adjuvants

INVENTOR(S): Magin, Ralph W.; Sauer, Joe D.; Delaet, Dru L.

PATENT ASSIGNEE(S): Albemarle Corp., USA

SOURCE: PCT Int. Appl., 20 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9736494	A1	19971009	WO 1997-US5577	19970403

W: CA, JP

RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE

PRIORITY APPLN. INFO.: US 1996-626098 19960403

OTHER SOURCE(S): MARPAT 127:315763

AB Glyphosate formulations which are effective even when employed at dosages below the dosage currently recommended for postemergent herbicidal or plant growth regulator use are described. They are formulated as water solns. or powders or granules of (a) one or more agriculturally acceptable amine, alkali metal, alkylsulfonium, alkylphosphonium, sulfonylamine, and/or aminoguanidine salts of glyphosate as the only herbicide; and (b) one or more water-sol. particular types of quaternary ammonium compds. as the only surface active ingredient(s). The quaternary ammonium compd.(s) are R1R2R3R4N+X- (R1 = C10-18 alkyl; R2 = C2-4 hydroxyalkyl; R3 = Me or Et; R4 = R1, R2 OR R3; X = Cl or Br).

IC ICM A01N057-20

CC 5-3 (Agrochemical Bioregulators)



IT **Herbicides**  
Pesticide formulations  
(glyphosate formulations with enhanced activity comprising hydroxyalkylammonium adjuvants)

IT **Hormones, plant**  
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
(glyphosate formulations with enhanced activity comprising hydroxyalkylammonium adjuvants)

IT **1071-83-6D, Glyphosate, salts 38641-94-0, Roundup 87753-51-3 153365-04-9**  
RL: **AGR (Agricultural use);** BIOL (Biological study); USES (Uses)  
(glyphosate formulations with enhanced activity comprising hydroxyalkylammonium **adjuvants**)

L36 ANSWER 36 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1997:672248 HCAPLUS

DOCUMENT NUMBER: 127:315761

TITLE: Glyphosate formulation comprising an activity-enhancing adjuvant

INVENTOR(S): Magin, Ralph W.; Sauer, Joe D.; Quebedeaux, Deborah A.

PATENT ASSIGNEE(S): Albemarle Corp., USA

SOURCE: PCT Int. Appl., 23 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9736491	A1	19971009	WO 1997-US5572	19970403
W: CA, JP				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 5700760	A	19971223	US 1996-627853	19960403
CA 2250340	AA	19971009	CA 1997-2250340	19970403
EP 902622	A1	19990324	EP 1997-921095	19970403
EP 902622	B1	19991110		
R: BE, DE, FR, GB, IT				
PRIORITY APPLN. INFO.:			US 1996-627853	19960403
			WO 1997-US5572	19970403

AB Glyphosate formulations which are effective even when employed at dosages below the dosage currently recommended for postemergent herbicidal or plant growth regulator use are described. They are formulated as water solns. or as powders or granules of (a) one or more agriculturally acceptable amine, alkali metal, alkylsulfonium, alkylphosphonium, sulfonamide, and/or aminoguanidine salts of glyphosate as the only herbicide or plant growth regulator used; and (b) a trihydrocarbyl amine oxide surfactant as the only surface active component used. The amine oxide is (i) a single alkyl di-Me amine oxide in which the alkyl group is a linear alkyl group having in the range of 10 to 14 carbon atoms, or (ii) a combination of two alkyl di-Me amine oxides of (i), or (iii) a combination of at least one alkyl di-Me amine oxide in which the alkyl group is a linear alkyl group having in the range of 10 to 14 carbon atoms and at least one dialkyl Me amine oxide in which the alkyl groups are linear alkyl groups each having in the range of 8 to 12 carbon atoms. Optionally, one or more agriculturally acceptable substances, none of which is a herbicide, a plant growth regulator or a surfactant can be

included in the formulation.

IC ICM A01N057-20

CC 5-3 (Agrochemical Bioregulators)

IT **Herbicides**

Pesticide formulations

(activity-enhancing adjuvant in glyphosate formulation)

IT **Hormones, plant**

RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)

(activity-enhancing adjuvant in glyphosate formulation)

IT **1071-83-6D, Glyphosate, salts 38641-94-0, Roundup  
87753-51-3 153365-04-9**

RL: **AGR (Agricultural use)**; BIOL (Biological study); USES (Uses)

(glyphosate formulation comprising an activity-enhancing  
adjuvant)

L36 ANSWER 37 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1997:671735 HCAPLUS

DOCUMENT NUMBER: 127:315723

TITLE: Effect of adjuvants on the activity of glyphosate and  
sulfonyleurea herbicides

AUTHOR(S): Woznica, Zenon; Nalewaja, John D.

CORPORATE SOURCE: Katedra Uprawy Roli i Roslin, Akademia Rolnicza,  
Poznan, Pol.

SOURCE: Progress in Plant Protection (1996), 36(2), 317-319  
CODEN: PPLPF3; ISSN: 1427-4337

PUBLISHER: Panstwowe Wydawnictwo Rolnicze i Lesne, Oddzial w  
Poznaniu

DOCUMENT TYPE: Journal

LANGUAGE: Polish

AB In the greenhouse and field expts. the effect of various adjuvants  
(cationic and nonionic surfactants, petroleum oils, methylated seed oils,  
ammonium sulfate and exptl. adjuvants) was detd. for the herbicidal effect  
of glyphosate (Roundup 360 SL), nicosulfuron (Milagro 040 SC), rimsulfuron  
(Titus 25 DF) and sulfosulfuron (MON 37532). The performance of adjuvants  
was specific, depending upon the herbicide. Exptl. adjuvants AR-375 and  
AR-503 showed a great potential when used as spray additives for  
herbicides.

CC 5-3 (Agrochemical Bioregulators)

IT **Herbicides**

(effect of adjuvants on the activity of herbicides)

IT **1071-83-6, Glyphosate 111991-09-4, Nicosulfuron 122931-48-0,  
Rimsulfuron 141776-32-1, Sulfosulfuron**

RL: **AGR (Agricultural use)**; BIOL (Biological study); USES (Uses)

(effect of **adjuvants** on the activity of herbicides)

L36 ANSWER 38 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1996:763491 HCAPLUS

DOCUMENT NUMBER: 126:43931

TITLE: Rokamin, Kaminox, and microemulsion arrangements as  
additives improving biological efficacy of herbicides

AUTHOR(S): Rola, Henryka; Badowski, Marek; Naraniecki, Bronislaw;  
Bekierz, Gerard

CORPORATE SOURCE: Inst. Uprawy Nawozenia i Gleboznawstwa, Wroclaw,  
50-540, Pol.

SOURCE: Materialy Sesji Naukowej Instytutu Ochrony Roslin  
(Poznan) (1996), Volume Date 1995, 35(1), 80-86  
CODEN: MSNRD5; ISSN: 0208-4414

PUBLISHER: Panstwowe Wydawnictwo Rolnicze i Lesne, Oddzial w  
Poznaniu  
DOCUMENT TYPE: Journal  
LANGUAGE: Polish

AB Results from last two years research on biol. estn. of microemulsion C as adjuvant for following herbicides: Basagran 600 in faba bean, Gesaprim, Titus 25 DF in maize, Targa Super in sugar beet and winter rape are presented. Rokamin and Kaminox were effective additives for Roundup. Pos. results were obtained during application of these herbicides in wheat growing before harvest for Agropyron repens control and for weed control on stubble, idle land and fallow.

CC 5-3 (Agrochemical Bioregulators)

IT **Herbicides**

(Rokamin, Kaminox, and Microemulsion C as adjuvants for)

IT 1912-24-9, Gesaprim 25057-89-0, Basagran **38641-94-0**, Roundup 76578-14-8 122931-48-0, Titus

RL: **AGR (Agricultural use)**; BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)

(Rokamin, Kaminox, and Microemulsion C as **adjuvants** for)

L36 ANSWER 39 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1996:628023 HCAPLUS

DOCUMENT NUMBER: 125:295166

TITLE: Dry concentrate (DC) spray adjuvants

AUTHOR(S): Underwood, Allen K.; Clark, Anthony; Mack, Robert E.; Thomas, James; Roberts, Johnnie R.; Volgas, Greg C.

CORPORATE SOURCE: Helena Chemical Company, Memphis, TN, USA

SOURCE: FRI Bulletin (1996), Volume Date 1995, 193 (Proceedings of the Fourth International Symposium on Adjuvants for Agrochemicals, 1995), 391-396  
CODEN: FRIB EJ; ISSN: 0111-8129

PUBLISHER: New Zealand Forest Research Institute

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The effectiveness of four dry conc. (DC) adjuvants was examd. Cohort DC (org. nonionic surfactant) and Kinetic DC (silicone-based nonionic surfactant) were as effective or more effective than conventional liq. formulation surfactants. NXS DC buffering agent was more effective at maintaining spray soln. pH than the liq. buffering agent Buffer P.S. Drop Zone DC drift retardant was not affected by shearing forces which reduced the effectiveness of the polyacrylamide-based drift retardant Nalcotrol II. Glyphosate efficacy was not reduced when Drop Zone DC was added to the spray soln. Drop Zone DC also improved the washoff resistance of the fungicide chlorothalonil.

CC 5-3 (Agrochemical Bioregulators)

IT **Herbicides**

Surfactants

(dry conc. spray adjuvants for herbicides)

IT **1071-83-6**, Glyphosate 99283-00-8, Chlorimuron 111991-09-4, Nicosulfuron

RL: **AGR (Agricultural use)**; BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)

(dry conc. spray **adjuvants** for herbicides)

L36 ANSWER 40 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1996:627970 HCAPLUS  
 DOCUMENT NUMBER: 125:295161  
 TITLE: Relationship of organosilicone adjuvant structure and phase behavior to activity enhancement of acifluorfen and glyphosate  
 AUTHOR(S): Burow, Richard F.; Penner, Donald; Roggenbuck, Frank C.; Hill, Randall M.  
 CORPORATE SOURCE: Dow Corning Corporation, Midland, MI, 48686-0994, USA  
 SOURCE: FRI Bulletin (1996), Volume Date 1995, 193(Proceedings of the Fourth International Symposium on Adjuvants for Agrochemicals, 1995), 54-59  
 CODEN: FRIBJ; ISSN: 0111-8129  
 PUBLISHER: New Zealand Forest Research Institute  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB A clear relationship has been established between organosilicone adjuvant structure and activity enhancement of water-sol. herbicides, such as acifluorfen and glyphosate, on broadleaf weeds. Activity enhancement increases as the siloxane chain decreases in length. Enhancement of activity reaches a max. when the av. polyether chain-length is about 7. Thus, max. activity enhancement and rain-fastness are achieved with the trisiloxane adjuvants having a polyether chain of 7 units. An acetyl terminal group on the polyether chain produces a somewhat greater enhancement with acifluorfen on velvetleaf, but not with glyphosate on velvetleaf. On giant foxtail with glyphosate, the greatest activity enhancement was achieved with hydrogen as the terminal atom on the polyether chain. Equil. surface tension values are not good predictors of the capacity of an organosilicone adjuvant to enhance herbicide activity. Ultra-low equil. surface tension appears to be a feature of organosilicone adjuvants exhibiting good herbicide activity enhancement and rain-fastness, yet some organosilicone adjuvants (S-4 and S-6) having low surface tensions did not produce optimal enhancement and consistent rain-fastness. Dynamic interfacial tensions against aliph. hydrocarbon liqs. may be more useful to predict adjuvancy. Surfactant phase behavior appears to offer clues to the processes by which those organosilicone adjuvants function which offer the greatest enhancement. These are those which form a dispersion of a surfactant-rich phase (esp. the lamellar liq. crystal phase) in the concn. range in which they are used.  
 CC 5-3 (Agrochemical Bioregulators)

IT **Herbicides**

(relationship of organosilicone adjuvant structure and phase behavior to activity enhancement of acifluorfen and glyphosate)

IT 1071-83-6, Glyphosate 50594-66-6, Acifluorfen

RL: **AGR (Agricultural use)**; BIOL (Biological study); USES (Uses)

(relationship of organosilicone adjuvant structure and phase behavior to activity enhancement of acifluorfen and glyphosate)

L36 ANSWER 41 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1996:45522 HCAPLUS  
 DOCUMENT NUMBER: 124:109646  
 TITLE: Adjuvant effects on sulfosate and glyphosate for control of red-rice in rice  
 AUTHOR(S): Foloni, L. L.  
 CORPORATE SOURCE: Dep. Agua Solo-Feagri, Unicamp Campinas, Brazil  
 SOURCE: Brighton Crop Protection Conference--Weeds (1995), (Vol. 2), 743-6  
 CODEN: BCPWE2; ISSN: 0955-1514

PUBLISHER: British Crop Protection Council  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB The min. tillage system for rice was implemented in Brazil in 1985 and later, the introduction of the no-till system for rice, expanded the cultivated area in the irrigated plain to approx. 25-30%. Generally, after the soil is prepd. (min. tillage) or before planting (no-till), herbicides are applied at the pre-planting stage when red-rice reaches approx. 25-30 cm in height. The efficacy of glyphosate and sulfosate (recommended dose generally 3.5 L/ha) at 3.5, 3.0 and 2.5 L/ha with the addn. of three types of adjuvants (siliconized and common) was examd. The results obtained at 7, 14 and 28 days after treatment showed that the addn. of siliconized adjuvants at 0.5% (vol./vol.) (poliglicol) assocd. with the use of low vol. nozzles (TeeJet DG 110.015), gave good weed control with herbicides (glyphosate or sulfosate) applied at 2.5 L/ha, at efficacy levels equiv. to those obtained with a dose of 3.5 L/ha.

CC 5-3 (Agrochemical Bioregulators)

IT **Herbicides**  
 Oryza rufipogon  
 Rice  
 Weed control  
 (adjuvant effects on sulfosate and glyphosate for control of red-rice in rice)

IT **1071-83-6, Glyphosate 81591-81-3, Sulfosate**  
 RL: **AGR (Agricultural use)**; BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)  
 (adjuvant effects on sulfosate and glyphosate for control of red-rice in rice)

L36 ANSWER 42 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1995:758979 HCAPLUS

DOCUMENT NUMBER: 123:135901

TITLE: Herbicidal compositions comprising fomesafen, nitrogen fertilizer and adjuvants.

INVENTOR(S): Barnes, Clyde James III

PATENT ASSIGNEE(S): Zeneca Ltd., UK

SOURCE: PCT Int. Appl., 25 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9517094	A1	19950629	WO 1994-GB2695	19941209
W:	AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SI, SK, TJ, TT, UA, UZ, VN			
RW:	KE, MW, SD, SZ, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG			
CA 2179648	AA	19950629	CA 1994-2179648	19941209
AU 9511961	A1	19950710	AU 1995-11961	19941209
AU 691540	B2	19980521		

EP 735820 A1 19961009 EP 1995-902871 19941209  
 EP 735820 B1 19990623  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE  
 CN 1138819 A 19961225 CN 1994-194613 19941209  
 CN 1073797 B 20011031  
 BR 9408403 A 19970805 BR 1994-8403 19941209  
 AT 181482 E 19990715 AT 1995-902871 19941209  
 US 5563112 A 19961008 US 1995-487714 19950607

## PRIORITY APPLN. INFO.:

US 1993-173340 A 19931222  
 WO 1994-GB2695 W 19941209

AB N fertilizers, such as urea-ammonium nitrate, and adjuvants (crop oil conc., Scoil, surfactants, etc.) enhance the herbicidal activity of fomesafen, esp. in soybean.

IC ICM A01N041-06

ICS C05G003-02

ICI A01N041-06, A01N059-00

CC 5-3 (Agrochemical Bioregulators)

Section cross-reference(s): 19

IT **Herbicides**

(comps. comprising fomesafen, nitrogen fertilizer and adjuvants)

IT **Fertilizers**

RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)

(ammonium nitrate-urea, herbicidal comps. comprising fomesafen, nitrogen fertilizer and adjuvants)

IT **Fertilizers**

RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)

(nitrogen, herbicidal comps. comprising fomesafen, nitrogen fertilizer and adjuvants)

IT **72178-02-0, Fomesafen 164003-52-5, Scoil**

RL: **AGR (Agricultural use)**; BIOL (Biological study); USES (Uses)

(herbicidal comps. comprising fomesafen, nitrogen fertilizer and adjuvants)

L36 ANSWER 43 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1995:350899 HCAPLUS

DOCUMENT NUMBER: 122:125971

TITLE: Solid agricultural adjuvants for pesticides.

INVENTOR(S): Chasin, David G.; Davis, Ronald I.

PATENT ASSIGNEE(S): USA

SOURCE: Can. Pat. Appl., 20 pp.

CODEN: CPXXEB

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

## PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CA 2093377	AA	19941006	CA 1993-2093377	19930405

PRIORITY APPLN. INFO.: CA 1993-2093377 19930405

AB Solid, free-flowing adjuvants for use with agricultural chems., such as pesticides, are formed by phys. combining urea with at .gtoreq.1 surfactant selected from ethoxylated aliph. alcs. or acids having at least 10 mol of ethylene oxide per mol of acid or alc. and 8-24 carbon atoms in the acid or alc. chain; block or random copolymers of ethylene oxide and propylene oxide ; a block or random copolymers of ethylene oxide and propylene oxide based on aliph. alcs. having 4-18 carbon atoms. These

adducts may also include other fertilizers, such as diammonium phosphate; acidifying agents, such as anionic phosphate esters of the formula  $\text{ROP(O)(OH)}_2$ , wherein R is alkyl, alkyaryl, alkoxyated alkyl, or alkoxyated alkylaryl; and/or sticking agents, such as fatty acids of alkoxyated novolac resins. The adducts are formed by mixing and heating the components to a uniform liq. melt and then cooling the adduct into a solid, free-flowing powder. The adjuvants may be built-in or tank mixed or dry blended with pesticide formulations. They function as activator adjuvants, compatibilizers, buffers, dispersants, wetting and/or sticking agents. Thus, an adjuvant was prep'd. by heating a mixt. of polyoxyethylene tridecyl alc. 50, urea 48 and water 2 wt.% at 120.degree.. This adjuvant enhanced the herbicidal activity of sulfosate against common weeds.

IC ICM A01N025-30

ICS A01N025-24; A01N025-14; C05G003-00

CC 5-3 (Agrochemical Bioregulators)

Section cross-reference(s): 19

IT Agrochemical formulations

**Herbicides**

**Pesticides**

(solid agricultural adjuvants for pesticides contg. fertilizers and surfactants)

IT **Fertilizers**

RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)

(solid agricultural adjuvants for pesticides contg. surfactants and)

IT **81591-81-3, Sulfosate**

RL: **AGR (Agricultural use)**; BIOL (Biological study); USES (Uses)

(solid agricultural adjuvants for herbicides contg. fertilizers and surfactants)

L36 ANSWER 44 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1994:127628 HCAPLUS

DOCUMENT NUMBER: 120:127628

TITLE: Effect of organosilicone-based adjuvants on herbicide efficacy

AUTHOR(S): Singh, Megh; Maci, Robert E.

CORPORATE SOURCE: Citrus Res. Educ. Cent., Univ. Florida, Lake Alfred, FL, 33850, USA

SOURCE: Pesticide Science (1993), 38(2-3), 219-25

CODEN: PSSCBG; ISSN: 0031-613X

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Lab. and field expts. were conducted to evaluate the efficacy of the postemergence herbicides, fluazifop-P-Bu, glyphosate-isopropylammonium, paraquat, and glyphosate-trimesium (sulfosate) as influenced by organosilicone-based adjuvants, "Dyne-Amic" and "kinetic". Conventional adjuvants "Agri-Dex" and "Induce" were included in all expts. for comparison. The exptl. plots were naturally infested with bahiagrass, camphorweed, common lambsquarters, Florida pussley, Jerusalem oak, hairy beggarticks, pigweed, and teaweed. Herbicides were applied alone or in combination with "Dyne-Amic", "Kinetic", "Agri-dex", or "Induce" using a tractor-mounted boom sprayer. "Dyne-Amic" (2.5 mL/L) was as effective as "Agri-dex" (10 mL/L) in increasing the efficacy of herbicides on grass and broadleaf weeds studied. "Kinetic" at 2.5 mL/L was as effective as "Induce" at 2.5 mL/L in increasing the efficacy of herbicides on the weeds studied. Paraquat tank-mixts. with the preemergence herbicides bromacil and diuron were more effective when applied at a spray vol. of 280 L/ha

than at 140 L/ha. Fluazifop-P-Bu and glyphosate-isopropylammonium were more effective at 186 than at 93 L/ha. Addn. of "Kinetic" or "Induce" to the herbicide spray soln. had no effect on pH, but fluazifop-P-Bu reduced pH to 5.1 or increased it to 7.7 when added to the 93 and 186 L ha<sup>-1</sup> preps., resp. Glyphosate-isopropylammonium reduced pH to 5.0 at the lower, but had little effect on pH at the higher rate. Redn. in static surface tension and contact angle was greater with organosilicone-based adjuvants than with conventional adjuvants.

CC 5-3 (Agrochemical Bioregulators)

IT **Herbicides**

(organosilicone adjuvants effect on efficacy of)

IT **1910-42-5** 8071-35-0, Krovar-I **38641-94-0**, Roundup

79241-46-6, Fusilade 2000 **81591-81-3**, Touchdown

RL: **AGR (Agricultural use)**; BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)

(herbicidal activity of, organosilicone **adjuvants** effect on)

L36 ANSWER 45 OF 45 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1992:526378 HCAPLUS

DOCUMENT NUMBER: 117:126378

TITLE: Some factors affecting herbicidal activity of glyphosate in relation to adjuvants and droplet size

AUTHOR(S): Prasad, Raj

CORPORATE SOURCE: For. Manag. Inst., Sault Ste. Marie, ON, Can.

SOURCE: ASTM Special Technical Publication (1992), STP 1112 (Pestic. Formulations Appl. Syst.: 11th Vol.), 247-57

CODEN: ASTTA8; ISSN: 0066-0558

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The influence of four adjuvants (Ethokem, Multifilm, Regulaid and Tween-20) and four spray-droplet sizes (159, 332, 447, 575 .mu.m) on efficacy and crop tolerance with a glyphosate formulation were investigated for white birch (*Betula papyrifera*) and white spruce (*Picea glauca*) under greenhouse and lab. conditions. Some adjuvants (Ethokem, and Tween-20) enhanced the effectiveness of glyphosate sprays without damaging the crop (white spruce) species. Tests with [14C]glyphosate showed greater penetration and translocation by birch leaves when an adjuvant was used. Of the four droplet sizes tested, small droplets (159 .mu.m) of glyphosate were more phytotoxic than large drops (575 .mu.m). The implication of these findings in relation to herbicidal action of glyphosate on forestry species is discussed.

CC 5-3 (Agrochemical Bioregulators)

IT **Herbicides**

(activity of, adjuvants and droplet size effect on)

IT **1071-83-6**, Glyphosate

RL: **AGR (Agricultural use)**; BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)

(herbicidal activity of, **adjuvants** and droplet size in relation to)